

CITY OF COLUMBUS
DIVISION OF FLEET
MANAGEMENT

GREEN FLEET ACTION PLAN 2022-2024

2022 Year End Update



THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

DEPARTMENT OF FINANCE
AND MANAGEMENT

INTRODUCTION

Recognizing the role a healthy environment plays in contributing to the City of Columbus' reputation as an Opportunity City, the City has established the Sustainable Columbus initiative. This initiative, under the leadership of Columbus Mayor Andrew J. Ginther, focuses on optimizing city operations and working with external stakeholders to enhance and promote environmentally friendly policies throughout our community. As part of our sustainability initiatives, Fleet Management developed a green fleet action plan, which serves as a road map to greening our city's fleet. This is now the fifth update of this plan, which builds upon our successes while strengthening our ongoing efforts to reduce our carbon footprint.



PURPOSE/STRATEGIES

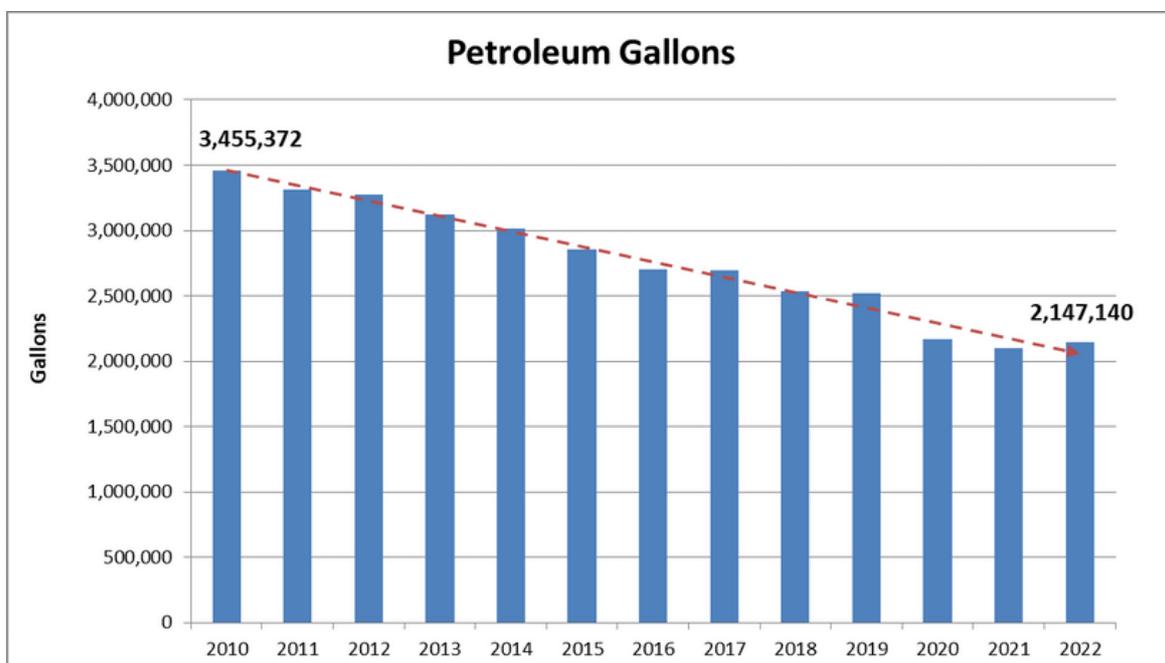
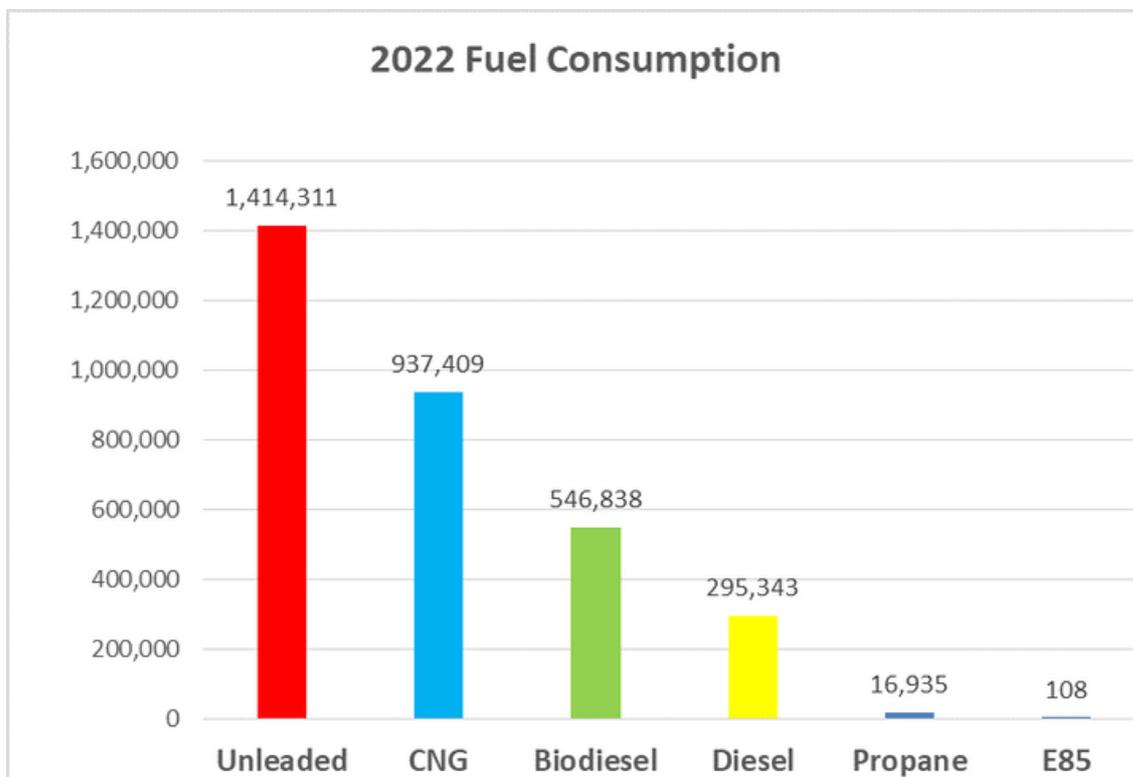
Columbus has a history of developing sustainability plans in collaboration with the community. The most recent update to our plan is known as *Sustainable Columbus 2030*. As part of its vision to be carbon neutral by 2050, Columbus has committed to a goal of reducing greenhouse gas emissions by 45% from municipal operations by the end of 2030. In order to help meet this goal, the main objective of Columbus' green fleet plan is to reduce our overall fleet emissions. Our efficient management of fuel consumption and increase in the overall efficiency of the fleet has driven down our greenhouse gas emissions over the last few years. From 2013-2021, Columbus reduced our fleet emissions by approximately 35%.*

One of the most effective ways to drive down fleet emissions is to reduce petroleum use. From 2010-2022, city fleet vehicles reduced petroleum use by 38% (over 1.3 million gallons). We expect this trend to continue, although level out, with the yearly addition of CNG and electric vehicles to our fleet as well as our continued use of biodiesel, E85 and propane fuels. We also continue to refine and enhance “green” procurement policies; to work with city agencies to right-size and downsize their fleets; promote the anti-idle policy and utilize GPS and AVL telematic technologies.

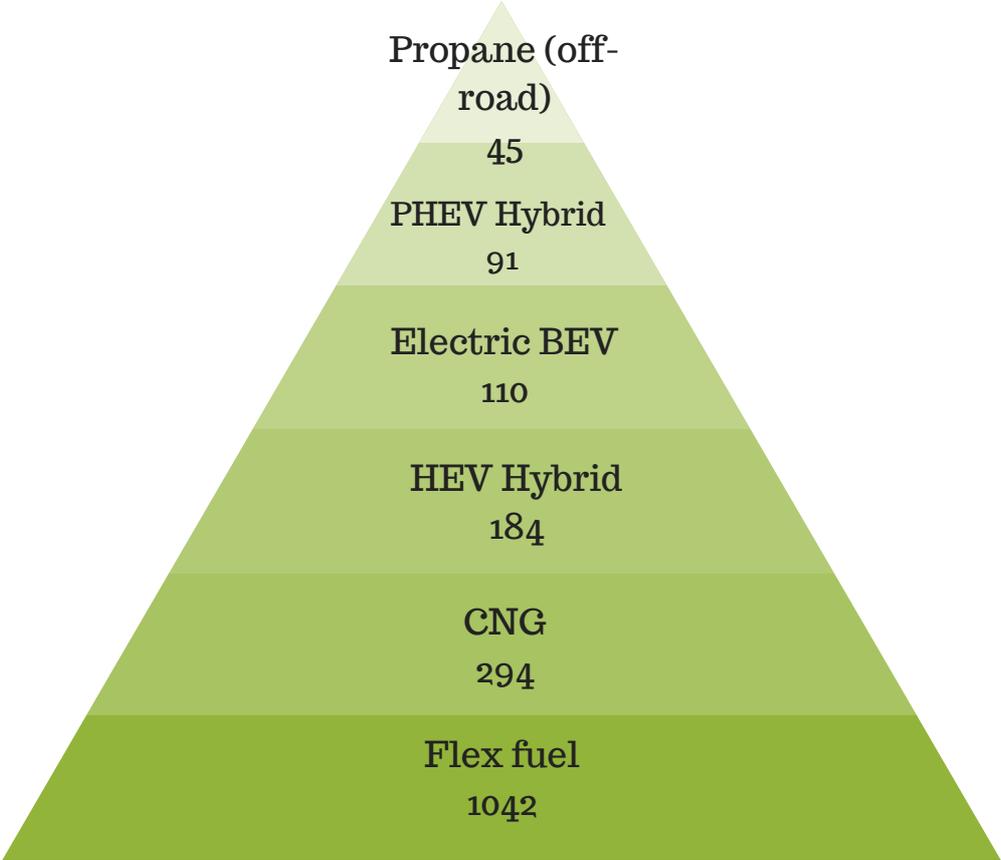
*City of Columbus Greenhouse Gas Inventory 2021

DIVISION OF FLEET MANAGEMENT

- The City of Columbus Fleet Management Division maintains over 6175 pieces of equipment
- Approximately 3017 are on-road vehicles, i.e. cars, trucks, SUVs, etc.
- Approximately 3159 are off-road, e.g. construction equipment
- Over 56% of Columbus' on-road fleet are some type of alternative fueled vehicle
- 3,210,943 total gallons of fuel were consumed in 2022 (including all alternative fuel). Fuel breakdown below
- Petroleum fuel use has steadily declined since sustainability initiatives have been put in place - 38% reduction since 2010 - that's over 1.3 million gallons!



Number on-road alternative fueled vehicles in Columbus fleet: 1721

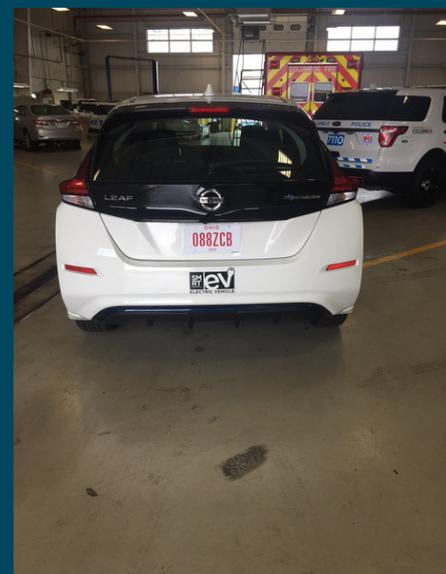


GREEN AWARDS



Columbus Fleet Management continues to be a front-runner in the nation in building a sustainable fleet. The past several years have yielded significant accomplishments toward this end goal, including:

- City of Columbus named the #1 Greenest Fleet in North America by Government Fleet
- City of Columbus awarded the #1 Leading Fleet in the U.S., due largely to our alternative fuel program - now considered an “Elite” fleet and sits on the judging panel for Government Fleet
- Awarded one of Heavy Duty Trucking’s Top 50 Green Fleets every year from 2013-2018 and again in 2022
- Seven Columbus divisions (Fleet Management, Refuse Collection, Facilities Management, Infrastructure Management, Sewerage and Drainage, Code Enforcement and the Division of Police) are all certified as Ohio Green Fleets
- Received the 2012 Sustainability award from Government Green Fleets
- Awarded the “Clean Fuels Champion” statewide award by Clean Fuels Ohio in 2008 and again in 2011
- Environmental Stewardship Award (2009) presented by Government Fleet Magazine, Bobit Publishing for public sector fleets in the USA



GREEN ACTIONS AND TARGETS 2021-2024

Following are the actions and targets Columbus will utilize to reduce petroleum use and achieve emission reductions from 2022-24.

Action: Increase light duty vehicle purchases that are considered green

- **Target:** at least 75% of light duty purchases each budget year will be green

Electric vehicles - In 2020, Fleet Management completed the first part of our electrification journey through the Smart Columbus initiative of adding 200 electric vehicles to our fleet, along with implementing the necessary charging infrastructure. In 2021, Columbus released a Climate Action Plan which continues and accelerates the electrification of our fleet by calling for all light duty passenger vehicles, excluding any with specialty use and essential services, to be electric by 2030. Columbus currently owns 201 combined battery electric vehicles and plug-in hybrid vehicles.

Hybrid electric vehicles - Hybrid technology features a gas engine plus an electric motor, and switches between the two. The gas engine and regenerative braking recharge the battery, which doesn't need to be plugged in. HEVs typically achieve better fuel economy and have lower fuel costs than similar conventional vehicles. Columbus currently owns approximately 184 hybrid vehicles.

Start/stop technology - Columbus owns approximately 40 Ford Escape vehicles equipped with "start/stop" technology. Start/stop technology is now standard equipment on these Escapes, which allows the engine to shut down during stops, so the vehicle emits zero emissions and burns no fuel. This technology is estimated to boost fuel economy by as much as 6% in stop and go traffic.

Flex fuel - a large portion of Columbus' light duty fleet are flex fuel vehicles - vehicles that can run on either regular gasoline or gas-ethanol blends up to 85% ethanol (E85). The use of E85 reduces our petroleum use and is also typically less expensive than regular gasoline.

2022 year-end update: Columbus purchased 108 light duty vehicles in 2022. Of these, 68, or 63%, were some type of green vehicle. The majority of green light duty vehicle purchases were hybrid vehicles for our Safety division, mainly police vehicles. Columbus placed multiple electric and hybrid orders in 2022 that were subsequently cancelled by the vendor due to ongoing global supply chain issues. EV components continue to be unavailable, leading to a severe battery shortage needed for EVs. Columbus will continue to pursue EV purchases as vehicles become available.



Action: Increase medium/heavy duty vehicle purchases that are considered green (excluding Safety vehicles)

- **Target:** at least 80% of medium/heavy duty purchases each budget year will be green

Compressed Natural Gas (CNG) vehicles - CNG vehicles comprise the majority of the city's medium/heavy-duty fleet. All heavy duty purchases are targeted for CNG when possible, as heavy duty vehicles are the largest consumers of fuel and therefore yield the greatest return on fuel savings and reduced emissions. Columbus currently operates three CNG fueling stations for use by both the city and the public located on the east, west, and north sides of the city, and shares a station with COTA located near downtown.

Renewable Natural Gas (RNG) - Renewable Natural Gas is quickly becoming the industry standard. RNG adoption would result in significant emissions reductions from the city's fleet as well as lowering our current CNG cost per gallon equivalent. Any of the city's current CNG stations can source RNG through a market contract with no modifications to current infrastructure, resulting in little to no upfront capital cost. A recent analysis predicts that switching to RNG would result in approximately 21% - 41% emissions reductions for the city's fleet. Columbus will explore the possibility of switching to RNG during the coming year.

Electric heavy duty vehicles - The availability of electrified heavy duty vehicles is currently quite limited but expected to expand by the end of this decade. Fleet Management will explore heavy duty electric vehicles with divisions whenever feasible. The Refuse Division purchased a pilot electric refuse truck in 2021 with funds from the U.S. Department of Energy that is expected to arrive sometime in 2024. Refuse is also exploring purchasing 2-4 medium duty electric box trucks in 2023.

2022 year-end update: Columbus purchased 31 med/heavy duty vehicles in 2022. Of these, 7, or 23%, were some type of green vehicle. All green med/heavy duty vehicle purchases were CNG vehicles. City vehicles consumed 937,409 gge's of CNG in 2022, resulting in a record combined fuel savings of over \$2.9M - \$2,450,805 from reduced costs compared to the high price of diesel fuel this year, plus \$468,704 from the anticipated federal alternative fuel tax credit of \$.50/gge.



Action: Implement green off-road options where equipment is available and fits the application

- **Target:** Continue to explore propane and electric options for off-road equipment

Fleet Management will work with divisions to explore available green off-road options, and will also work with our Purchasing Office to include green options in off-road equipment specifications.

Propane - Columbus currently has 38 propane mowers in service, for use mainly at municipal golf courses and parks. Mowers continue to be replaced with propane when available. We also have 7 propane powered forklifts and one propane floor sweeper.

Electric - There are approximately 15 electric utility carts in use around various city sites including our Groves Road fleet facility, the Utilities complex and Police division. The utility carts come equipped with flat beds and are able to haul 6,000 pounds of load as well as tow. These carts all replace gasoline powered units. We also have an electric floor scrubber and 7 electric forklifts currently in use.

2022 year-end update: Our Recreation and Parks department received 7 new propane mowers and our Traffic Division received one electric utility cart in 2022. Other agencies continue to explore alternative fueled off-road options as available.



Next Steps

Achieving these targets and reducing our emissions from fleet operations will require the participation of all City departments and divisions. The Fleet Management Division, with support from the Director of Finance and the Mayor's Sustainable Columbus initiative, will take the lead in implementing these actions and will track the progress of the targets. Updates will be provided at mid-year and year end to outline the activity that has taken place. We expect this document to be fluid- new technology, new grant opportunities, funding challenges, etc. are constantly happening. Every effort will be made to take advantage of the best options available to make our fleet as sustainable as possible while minimally impacting City operations.



DEPARTMENT OF FINANCE
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<https://www.columbus.gov/finance/asset-management-group/Fleet-Management/>